

Exhibit 6

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

_____)	
EXXON MOBIL CORPORATION,)	
)	
Plaintiff,)	
)	
v.)	Civil Action Nos. H-10-2386 (LHR)
)	H-11-1814 (LHR)
UNITED STATES OF AMERICA,)	
)	
Defendant.)	
_____)	

SECOND REBUTTAL DECLARATION OF A.J. GRAVEL

1. My name is A. J. Gravel. I am over eighteen (18) years of age and I reside at 11603 Danville Drive, Rockville, MD, 20852. I have personal knowledge of the facts set forth in this declaration and am competent to testify to them if necessary.

2. I am a Senior Managing Director at FTI Consulting, Inc. (“FTI”), a global business advisory firm, in the Environmental Solutions practice group and lead the Forensic History and Analysis group. In 1995, I joined a professional historical research company, PHR Environmental Consultants, Inc. (“PHR”), which became a wholly-owned subsidiary of The IT Group in 1999. I started at that firm as Vice President and Director of East Coast Operations, rose to the position of President, and assumed overall responsibility for the firm when its founders retired in 2001. I joined LECG, LLC (“LECG”) in 2002 along with the historians and other professionals that supported my work at PHR. In March 2011, FTI purchased the environmental practice of LECG. As a result of the purchase, my team and I joined FTI. I have a B.S. from Springfield College, Springfield, Massachusetts and a Masters of International Management from the University of Maryland University College, College Park, Maryland. As

the leader of FTI's Forensic History and Analysis group and in my work with LECG, The IT Group and PHR I have provided forensic historical research and environmental cost analysis services to corporations, joint defense groups, and public sector clients. My educational background, work experience, publications and prior testimony are truly and correctly presented in my resume attached as **Attachment 1**.

3. I have been retained by Exxon Mobil Corporation ("ExxonMobil") to conduct historical research, perform related analysis, present opinions and rebut opposing experts regarding the Federal government's involvement at the Baytown, Texas, and the Baton Rouge, Louisiana, refinery and chemical complexes ("Baytown" and "Baton Rouge").¹ This declaration summarizes opinions contained in my Expert Report dated June 18, 2012 (filed with my September 26, 2013 declaration) and my Rebuttal Report dated December 21, 2012 (filed with my December 20, 2013 declaration). I hereby incorporate both reports by reference into my sworn declaration.

4. In his December 20, 2013 declaration, Dr. James Kittrell makes statements and draws certain conclusions that are not consistent with the historical record of the operational integration of the Government-owned Plancors with the refineries. For instance, Dr. Kittrell states, "In my opinion, the Plancor installations at both Baton Rouge and Baytown were not significantly integrated into the waste water treatment systems of their respective refineries;"² and later, "Exxon offers no evidence that the waste streams associated with...Hydrogenation Plancor 1868 were commingled with the Baton Rouge refinery's waste processing system."³

¹ For the purposes of this Declaration, the Baytown and Baton Rouge Complexes consist of the respective petroleum refineries and chemical plants present at those locations during WWII and the Korean War.

² Declaration by Dr. James Kittrell, December 20, 2013, p. 3, ¶ 4

³ Declaration by Dr. James Kittrell, December 20, 2013, p. 6, ¶ 6e

5. From a historical perspective, the Plancors at Baytown and Baton Rouge were integrated with their host refineries which provided operating infrastructure such as raw materials, water, steam and electrical power and process waste treatment and disposal support facilities. The following examples demonstrate this integration.

6. Leaseholds 1 and 2 of Hydrogenation Plancor 1868 were built on Baton Rouge refinery property, as was Butadiene Conversion Plancor 1355 (RuR SR-123). In my report dated June 18, 2012, I provide documentation that not only were liquid wastes from Leaseholds 1 and 2 of Plancor 1868 disposed of into the refinery sewers at Baton Rouge, but so were liquid wastes from Plancor 1355.⁴

7. Both Plancor 1355 and 1868 were located inside of and were integrated with the Baton Rouge refinery so completely that they could not operate as independent units.⁵ These Plancors were not only dependent on the refinery for their operating feed stocks, electrical power and water supplies, but they also used the refinery's sewer systems for disposal of liquid wastes. The Defense Plant Corporation ("DPC") Engineer's Final Report for Plancor 1355 states that "effluent water enter[s] the refinery storm sewer and oil sewer systems at several points."⁶ While Dr. Kittrell attempts to minimize the volume and impact of the wastes from Plancor 1355, he does not dispute that these are process wastes that were "comingled with the Baton Rouge refineries (sic) existing refinery's waste processing system."⁷

⁴ Report of A.J. Gravel, June 18, 2012, Plancor 1355 see pp. 154-156 and 204; Plancor 1868 pp. 159-162 and 205.

⁵ George M. Parsons, "Appraisal – Plancor 1868," February 13, 1947, pp. 2, 6, 14 [BRC-00003285]; Synopsis of Engineer's Final Report – Plancor 1355, April 30, 1944 [BRHIS-00004377 - 4377]

⁶ DPC, "Engineer's Final Report as of April 30, 1944 for Plancor 1355," p. 5 [BRHIS-00004384]

⁷ Declaration by Dr. James Kittrell, December 20, 2013, p. 5, ¶ 5c

8. The DPC Engineer's Final Report for Plancor 1868 states, "Sewers are connected to the Lessee's sewerage system off-site...[s]ystem is of ample capacity for the plant."⁸ Further, Exhibit A to the Plancor 1868 Lease Agreement details the modifications made to the refinery's hydrogenation unit in order to produce xylidine for the War Department.⁹ These modifications included a DPC-owned concrete sump, a slop pump and connecting sewers to convey "slop containing CS." The slop was "pumped through a 4" sewer to the 6" sewer extending from the Hydro site to the Mississippi River."¹⁰ This 6-inch sewer line was owned by the DPC and installed within the refinery.¹¹ While xylidine production at Plancor 1868 was of short duration, the Plancor facilities were modified in 1944 to produce hydrogenated products used for aviation gasoline blending. Plancor 1868 continued to operate until the end of WWII.

9. Plancors and Federally-owned facilities located within the Baytown Refinery, such as the Baytown Ordnance Works and Plancor 1909, were similarly integrated with the host refinery.¹² Plancor 1909 was a hydrogenation unit located within the boundaries of Humble's Baytown refinery built for the production of aviation gasoline components by the hydrogenation of selected polymer and catalytically cracked naphtha.¹³ The hydrogen used at Plancor 1909 was produced by the operation of the Baytown Ordnance Works and Plancor 485, the butadiene plant. The refinery supplied a portion of the feed stocks processed in the hydrogenation unit as well as kerosene used as absorber oil and naphthenic gas oil used as purge oil. By-products from

⁸ DPC, "Engineer's Final Report – Plancor 1868," December 31, 1945, p. 109 [BRHIS-0000198]

⁹ "Exhibit A – Plancor 1868 Lease Agreement," November 3, 1943 [BRHIS-00012654]

¹⁰ "Exhibit A – Plancor 1868 Lease Agreement," November 3, 1943, p. 20 [BRHIS-00012674]

¹¹ "Exhibit A – Plancor 1868 Lease Agreement," November 3, 1943, p. 23 [BRHIS-00012676]

¹² For a discussion of the integration of the Baytown Ordnance Works with the refinery please see my declaration dated September 26, 2013, ¶ 18

¹³ DPC, "Factual Appendix A, Plancor 1909 – Hydrogenation Unit, Baytown, Texas," January 10, 1945, Schedule I, p. 9, [BAYHIS-00010511; p. 32, General Description [BAYHIS-00010534]

Plancor 1909, including spent absorber oil, purge oil and bottoms from the distillation of raw naphtha feed stocks, were purchased by Humble and returned to the refinery for reprocessing.¹⁴

10. The use of the Baytown refinery sewers by Plancor 1909 was factored into the contract fees paid by the Defense Supplies Corporation for the operation of the unit and was identified as part of the “Refinery Burden” costs.¹⁵ This is confirmed by the DPC Engineer’s Final Report which states that “[a] 24” main sewer was installed to service this Plancor. The sewer originates within the unit and terminates approximately 600’ away in the Lessee’s disposal system.”¹⁶ The connection of Plancor 1909 to the refinery sewers is described in detail by the DPC Engineer as offsite facilities necessary to the operation of the Plancor,

“To provide drainage at the Hydrogenation Unit and CO₂ Removal Unit and to take care of pump drips and overflows from other pieces of equipment, a system of catch basins, manholes and sewers were installed. A main trunk sewer was constructed from the North limits of the Hydrogenation Unit to an open disposal ditch South of Crosby Street, a distance of about 840 feet.”¹⁷

11. During the wartime period, the Government implemented a nationwide policy to regulate and control the allocation of scarce materials. This policy affected all entities desiring to use these materials for whatever purpose, including refineries like Baytown and Baton

¹⁴ “Bases for Processing Charge = Cost of Petroleum Materials (Other than Raw Feed Stocks), and Values of By-Products as used in Humble – DSC Contract Covering Operation of Plancor 1909,” no date, p. 1. [BAYHIS-00024827]

¹⁵ “Bases for Processing Charge = Cost of Petroleum Materials (Other than Raw Feed Stocks), and Values of By-Products as used in Humble – DSC Contract Covering Operation of Plancor 1909,” no date, p. 7. [BAYHIS-00024833]

¹⁶ DPC, “Engineer’s Final Report, Plancor 1909,” September 15, 1944, p. 14 [BAYHIS-00010590]

¹⁷ DPC, “Factual Appendix A, Plancor 1909,” January 10, 1945, p. 38. [BAYHIS-00010540] It should be noted that historical maps and aerial photographs show that the open disposal ditch south of Crosby Street was the West Ditch which flowed to the Baytown Refinery waste processing and disposal system during the period of Federal involvement. See also, Map of the Baytown Refinery, Revised August 2, 1940 [BAYC-00013843]; Aerial Photograph, April 11, 1944 [BAYC-00014086 – 14087]

Rouge.¹⁸ Further, it required companies to make requests for the allocation of these materials for a wide range of projects including those related to waste processing and disposal.

12. In fact, the history of the construction Hydrogenation Plancor 1868, as recounted in the DPC Engineer's reports, illustrates the control exercised by the War Production Board ("WPB") over the nation's construction projects during WWII. As early as October 1941 the Supplies Priorities and Allocation Board ("SPAB")¹⁹ prohibited initiation of any non-essential public or private construction requiring "appreciable quantities of critical materials," and announced a general policy that priorities for the procurement of materials would be granted only to "projects necessary for national defense or essential to the maintenance of public health and welfare."²⁰

13. The WPB's construction policies which applied "strict standards...for the approval of projects based on war essentiality," had "great influence" on construction efforts at the nation's refineries.²¹ Even projects that were approved "on the basis of war-time necessity...may have to be given relatively low priority rankings."²² This was true for the construction of Plancor 1868, which expanded the existing hydrogenation unit. In October 1942, the Office of the Petroleum Coordinator ("OPC")²³ requested that Standard Oil of Louisiana ("SOLA") expand its existing hydrogenation plant at Baton Rouge using second-hand equipment

¹⁸ John W. Frey and H. Chandler Ide, *A History of the Petroleum Administration for War, 1941-1945*, US Government Printing Office, Washington, 1946, pp. 158-168 [MIS-00022528 to 22538]

¹⁹ The SPAB was a predecessor of the WPB.

²⁰ U.S. Civilian Production Administration, *Industrial Mobilization for War: History of the War Production Board and Predecessor Agencies, 1940-1945*, Greenwood Press, New York, 1969 (reprint of the 1947 edition), pp. 160-161 [MISC-00063850] (included as **Attachment 2**)

²¹ Letter, G. L. Parkhurst, PAW Assistant Director of Refining to C. J. Everett, Director of Refining, PAW District 1, November 6, 1944, p. 1 [MIS-00008133]

²² Letter, G. L. Parkhurst, PAW Assistant Director of Refining to C. J. Everett, Director of Refining, PAW District 1, November 6, 1944, p. 2 [MIS-00008134]

²³ The OPC was a predecessor of the Petroleum Administration for War ("PAW").

purchased from the Bayway refinery of Standard Oil Company of New Jersey.²⁴ This Bayway equipment, including compressors, pumps, pipe valves and steel buildings, was originally purchased by Bayway in about 1929 and was about 13 years old when sold to Baton Rouge. Even though SOLA had managed to obtain the used equipment, it “was handicapped in carrying out this Hydro expansion due to the fact that priorities were difficult to acquire.”²⁵ In fact, the hydro expansion project was “discontinued because of priority ratings” until May 1943 when priority approvals were finally obtained. In July 1943 the project was transferred to the DPC and became known as Plancor 1868.²⁶ Plancor 1868 began production in December 1943.²⁷

14. The PAW was the gate keeper for refinery construction projects and “only recommended projects...for approval when...the projects clearly qualified under existing essentiality standards.”²⁸ The PAW “strip[ped] and screen[ed],” all proposed refinery construction projects before they were presented to the WPB for allotment of the materials and assignment of priorities.²⁹ It was the PAW, implementing the WPB’s essentiality standards, which ruled against the allocation of the materials necessary for the construction of the Baton

²⁴ DPC, “Engineer’s Semi-Final Report of DPC – Plancor 1868,” December 15, 1944 [BRHIS-00000210]

²⁵ DPC, “Engineer’s Final Report – Plancor 1868,” December 31, 1945, pp. 115-116 [BRHIS-00000204 - 205]

²⁶ DPC, “Engineer’s Semi-Final Report of DPC – Plancor 1868,” December 15, 1944 [BRHIS-00000210]

²⁷ DPC, “Engineer’s Final Report – Plancor 1868,” December 31, 1945, p. 5 [BRHIS-0000096]

²⁸ Letter, Ralph K. Davies, Deputy Petroleum Administrator to J. A. Krug, Acting Chairman, WPB, September 30, 1944, p. 3 [MIS-00008137]

²⁹ John W. Frey and H. Chandler Ide, *A History of the Petroleum Administration for War, 1941-1945*, US Government Printing Office, Washington, 1946, p. 302 [MIS-00022693]

Rouge master separator in Callaghan's Bayou deeming the project was "not of sufficient essentiality to the war program."³⁰

15. The fact that SOLA was also forced to "discontinue" the construction of the expanded hydrogenation facilities at Baton Rouge for lack of priority ratings, even when the expanded facilities had been requested by the OPC for the aviation gasoline program, illustrates the impact of these WPB policies on refinery construction projects.

16. The Federal policy controlling access to scarce materials impacted the Baytown refinery as well. For example, in February 1944, Baytown requested PAW assistance in obtaining the necessary priority ratings to construct facilities to divert effluent from the Butadiene Plancor 485 "into the main sewer at the applicant's refinery." This effluent flowed at a rate of approximately 30,000 gallons per hour and contained emulsified quench oil. The PAW recommended that the WPB approve a high priority rating for the project. The PAW's justification cited the need to reduce the "objectionable quantities of oil...being discharged into Scott Bay," and the fact that in the refinery sewer system "the separator is more extensive and the greater portion of the oil should be recovered." Further, PAW weighed the benefits of changing the discharge point for this effluent when making its decision stating, "the main refinery sewer system discharges into the flowing ship channel instead of the still body of water in Scott Bay, and in this flowing ship channel the effect of the effluent will be less objectionable."³¹ When measured in July 1946, the quench oil effluent stream pumped from

³⁰ J. E. Miller, "Master Separator in Callaghan Bayou," September 10, 1946, p. 1 [BRHIS-00014109]; WPB Recommendation for Action, Builder's Serial No. 131,021, Installation of a new master oil separator, August 15, 1944 [BRHIS-00006683]

³¹ WPB Recommendation for Action, Builder's Serial No. 6884 (11th Amendment), February 9, 1944, p. 2. [BAYHIS-00012661]

Butadiene Plancor 485 to the refinery main sewer for disposal flowed at a rate of 740 gallons per minute (about 44,440 gallons per hour) and contained 3,000 to 5,000 ppm of oil.³²

17. PAW correspondence with the WPB further documents that the two Federal agencies cooperated in controlling refinery construction projects. By September 1944 PAW reported to the WPB that there was a “tremendous back-log” of refinery construction projects awaiting approvals.³³ The backlog included requests by Humble Oil for roads at Baytown and by SOLA for \$1,134,312 for “sewers” at the Baton Rouge refinery. Both of these requests PAW had recommended that the WPB deny “on the basis of present essentiality standards.”³⁴ The request to construct “sewers” at Baton Rouge is a reference to SOLA’s request to construct a master separator in Callaghan’s Bayou which was estimated to cost \$1,134,312.³⁵

18. Further, the areas of the Baton Rouge refinery known as the Old Silt Pond (“OSP”) and the Rice Paddy Land Farm (“RPLF”) were contaminated, at least in part, by wartime operations. These areas were located within the Shallow Fill Zone, a large portion of the refinery property located in the batture area adjacent to the Mississippi River. As discussed in my June 18, 2012 report,³⁶ historical documentation indicates that wastes generated by refinery operations during the period of Federal involvement were deposited in the OSP and RPLF areas.

³² Sheppard T. Powell, “Report to the Reconstruction Finance Corporation on Industrial Wastes, RuR SR-10 Butadiene, Baytown, Texas,” July 26, 1946, p. 234 [BAYHIS-00006439]

³³ Letter, Ralph K. Davies, Deputy Petroleum Administrator to J. A. Krug, Acting Chairman, WPB, September 30, 1944, p. 2 [MIS-00008136]

³⁴ Letter, Ralph K. Davies, Deputy Petroleum Administrator to J. A. Krug, Acting Chairman, WPB, September 30, 1944, attachment Table 1, p. 3 [MIS-00008143]

³⁵ WPB Recommendation for Action, Builder’s Serial No. 131,021, Installation of a new master oil separator, August 15, 1944 [BRHIS-00006683]

³⁶ Report of A.J. Gravel, June 18, 2012, pp. 214-216.

19. First, refinery operations from the late 1930s until 1945 generated a considerable volume of waste waters containing oily silt that was ultimately discharged in Callaghan's Bayou, which was located in the batture area. Mississippi River water, which contained high levels of silt, was used as cooling water and generated process waste waters containing oily silt that was discharged to the refinery process sewers and passed through the refinery oil/water separators. Although a large portion of the oily silt was carried into the river, some material would have settled in the OSP area. Use of Mississippi River water for cooling ceased in the early 1970s.

20. Second, a silt treating unit was installed at the refinery in 1945 that treated the silt pumped from the refinery separators. After treatment to remove most, but not all of the entrained oil, the silt slurry was deposited into the OSP area.

21. Third, to support the use and expansion of the 20-acre silt pond, levees were constructed on the north and west sides of the OSP to a height of approximately 50 feet. In addition, materials including refinery debris – which was generated at least in part during the period of federal involvement – were used to raise the levee and construct a road on the south side of the OSP. Finally, a waste burn pit located within the boundary of the OSP was relocated to allow for levee and road construction.

22. Fourth, a portion of the wastes entering these units were generated by Federally-owned production units located at Baton Rouge including Plancors 1355 (butadiene conversion), 152 (butadiene) and 572 (butyl rubber).

23. Fifth, before the 15-acre RPLF area was used as a landfarm, the area had been used since the early days of the refinery as a landfill for the disposal of refinery wastes.

According to a report prepared for USEPA, wastes such as refinery rubble, sludges, catalysts and tank bottom sludges were disposed of in the landfill beneath the landfarm.³⁷


24. Sixth, in 1946 a project was undertaken to dredge materials from the bottom of Callaghan's Bayou. Ultimately, because the composition of these materials made them unsuitable for levee construction, they were spread by bulldozer and crane over the batture area. These materials would have included oily silt deposited prior to dredging including during the WWII period.

25. In addition, I have reviewed the Rebuttal Report of Wayne Grip dated December 19, 2012 concerning the analysis of historical aerial photographs relating to Baton Rouge. In his report Mr. Grip notes that an Exxon sewer map depicts an impounding basin that is connected by a 48" concrete pipe to the RPLF area. He further indicates that the concrete pipe appears to have been used to discharge liquid materials to the RPLF area.

26. Mr. Grip's findings and analysis of the historical aerial photographs (as attested to in his deposition on April 17, 2013), appear to be consistent with my analysis of the historical documentary record concerning the development and operation of the waste handling facilities along the batture and the deposition of wastes in the areas of the OSP and the RPLF.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed in Rockville, MD, on January 17, 2014



A.J. Gravel
FTI Consulting, Inc.

³⁷ Preliminary Review/VSI Report, A.T. Kearney, Inc., August 26, 1987, pp. 5-25 to 5-27 [BRTECH-00006015 - 6017]

Attachment 1

A.J. Gravel

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PROFESSIONAL SUMMARY

Mr. Gravel is a Senior Managing Director in FTI Consulting's Forensic Litigation and Consulting segment and he heads Forensic History and Analysis group. Mr. Gravel is based in the Washington DC area and has over twenty years combined experience as a consultant and expert witness. He has managed the execution of over 100 environmental, products liability, and litigation support projects and has provided testimony in both the expert and 30(b)(6) contexts.

Professional Affiliations

American Society of
Environmental History

National Council on Public
History (NCPH)

Environmental Law
Institute

American Bar Association
(Associate Member,
Environment and Natural
Resources Section)

Education

B.S. in Health Sciences,
Springfield College,
Springfield, MA

Masters Degree in
International Business
Management, University
of Maryland, University
College

Mr. Gravel's primary areas of expertise include forensic history and environmental cost analysis. He has experience assisting clients with the recovery of costs under CERCLA and in that area has provided services such as: Potentially Responsible Party (PRP) identification; site history reconstruction; corporate succession and asset searches; waste-in database development and cost allocation analysis; cost claim package development and/or validation; National Contingency Plan (NCP) analysis; and environmental liability estimation. Mr. Gravel has also used forensic history and cost analysis techniques to address issues in other environmental, toxic tort and products liability matters. Examples of the types of analyses conducted relating to these matters includes: past industrial waste generation and disposal; Natural Resource Damages (NRD) baseline investigations; mergers and acquisitions due diligence analysis; land use and business operation histories; insurance archeology; and alternate causation, standard-of-care state-of-knowledge, industry practices, level-of-awareness; government involvement and regulatory development and regulatory oversight studies.

Mr. Gravel's experience includes work in a variety of industries including but not limited to: mining and smelting; petroleum refining; chemicals; shipbuilding, ship conversion and scrapping; industrial manufacturing; and aircraft engine overhaul industries among others. Mr. Gravel has worked on cases national and international in scope and multi-jurisdictional cases. His work is performed for a diverse clientele that includes private and public sector entities and joint defense groups.

PUBLICATIONS

Lisa Walsh and A.J. Gravel, A. Quantifying Environmental Liabilities in the Bankruptcy Context, Pratt's Journal of Bankruptcy Law, February/March 2009.

"Site History: The First Tool of the Environmental Forensics Team," in *Introduction to Environmental Forensics*, Academic Press, 2001. Written in conjunction with Dr. Shelley Bookspan and Julie Corley. This book was updated in 2006 and the 2nd edition was released in 2007 and is in use as part of the university environmental forensic curricula at University of Wales and Queen's University of Brighton in the United Kingdom, as well as at North Carolina State University.

REPRESENTATIVE ENGAGEMENTS

Expert and 30(b)(6) Witness Assignments

Betty Jean Cole, et al. v. ASARCO Incorporated et al. and Sammy Beets, et al. v. Blue Tee Corp. et al. Mr. Gravel was retained to conduct historical research, perform related analysis and present opinions relating to the federal government's involvement in mining, milling and related activities in the Picher Field; historical mining and milling operations of the corporate predecessors of Blue Tee Corporation and Gold Fields American Industries in the Oklahoma portion of the Tri-States Mining District; chat generation and use as a salable product; and the role of municipal entities in the dispersal of chat throughout the Picher Field.

The Quapaw Tribe of Oklahoma (O-Gah-Pah) v. Blue Tee Corporation, et al. Mr. Gravel was retained to conduct historical research, perform related analysis and present opinions regarding the federal government's involvement in mining, milling and related activities in the Picher Field; its involvement with, and awareness of, mine and surface cave-ins and collapses over time; and the historic operations of the defendants alleged predecessors in the Picher Field.

New York State Gas & Electric Corporation v. FirstEnergy Corp. Mr. Gravel was retained to conduct historical research, perform related analysis and to present opinions related to the development and roles of certain public utility holding and management service companies as they related to the operational management of eighteen (18) manufactured gas plants located in the State of New York.

The Quapaw Tribe of Oklahoma (O-Gah-Pah) v. Blue Tee Corporation, et al. Mr. Gravel was retained to provide 30(b)(6) testimony on the historical mining and milling operations of the corporate predecessors of Blue Tee Corporation and Gold Fields American Industries in the Oklahoma portion of the Tri-States Mining District as well as corporate knowledge and awareness of certain other topics relating to potential NRD issues.

Moraine Properties, LLC v. Ethyl Corporation Mr. Gravel was retained to provide opinions relating to whether the plaintiff undertook reasonable operational practices with regard to its management of wastewater treatment sludge, including identifying and addressing PCB issues; and whether the response actions taken and associated environmental costs incurred by the plaintiff were necessary costs of response incurred in substantial compliance with the applicable requirements of the NCP and resulted in a CERCLA-quality cleanup. Mr. Gravel was also retained to examine Ethyl Corporation's historical operations as they related to a paper mill site and provide 30(b)(6) testimony on specific topics relating to those operations.

Evansville Greenway and Remediation Trust v. Southern Indiana Gas and Electric Company, Inc., et al. Mr. Gravel was retained to provide opinions relating to whether the response actions performed, and associated costs incurred by the plaintiff, were in substantial compliance with the applicable requirements of the National Contingency Plan (NCP) and resulted in a CERCLA-quality cleanup.

Innis Arden Golf Course v. Pitney Bowes, Inc. et al. Mr. Gravel was retained to provide opinions relating to whether the response action and associated costs incurred by the plaintiff were in substantial compliance with the applicable requirements of the National Contingency Plan (NCP) and resulted in a CERCLA-quality cleanup.

Price v. Price. Mr. Gravel was retained to evaluate the cost impacts of a United States Environmental Protection Agency (USEPA) Consent Judgment (CJ) for a landfill in New York, and to determine the effect of the pending CJ on the ability to perform a valuation of the landfill.

BNSF Railway Company v. The Doe Run Resources Corporation, et al. Mr. Gravel was retained to provide opinions on the regulatory development of the Hazardous Materials Transportation Act as it related to the transport of specific commodities; the nature and extent to which lead-containing materials were used by the railroad in the course of its operations over time, and identification of anthropogenic sources of lead that could have potentially contributed to contamination along tracks and in rail yards.

Jersey City Municipal Utilities Authority v. Honeywell International, Inc. Mr. Gravel was retained to present opinions relating to the historic operations of the Jersey City municipal Authority and Jersey City Incinerator Authority from 1910 to the present and environmental cost allocation.

In re: Dana Corporation, et al. In this bankruptcy proceeding, Mr. Gravel was retained to perform several analyses including, 1) the Federal government's historic role in the operations of a former capacitor manufacturing facility and its potential contribution to contamination for which cleanup costs were claimed; 2) the quantification of environmental response costs and evaluation of indirect and oversight costs and discount rates; 3) the quantification the NRD Trustees' claim; and 4) environmental cost allocation analysis to develop the Debtor's net cost share percentage of claimed costs. Mr. Gravel also provided 30(b)(6) testimony in this matter.

Perrine et al. v E.I. DuPont de Nemours and Company et al. Mr. Gravel was retained to provide opinions relating to historical operations of the facility and the identification of anthropogenic sources that may have contributed to contamination in the class area over time.

Tonya Lee Drummond et al. v. E.I. DuPont de Nemours and Company et al. Mr. Gravel was retained to provide opinions relating to historical standard-of-care and the appropriateness of landfill practices with regard to disposal of smelting residues.

Disabled in Action of Pennsylvania v. Southeastern Pennsylvania Transportation Authority Mr. Gravel was retained to conduct an investigation and render an opinion relating to the history, development, growth and character of land use in the Penn Center & Suburban Station area of downtown Philadelphia for the period 1890 through 2005.

Bill and Jackie Holder, et al. v. Gold Fields Mining Corporation, et al Mr. Gravel was retained to conduct a historical investigation and render opinions relating to mining and milling techniques; the role and influence of the Federal government on mining activities and methods; whether chat, tailings and other mining by-products were/are saleable products that possess commercial value; the state of knowledge relating to the toxic effects of lead in chat, tailings and surface dust; the role of local State and Federal public works projects in the dispersal of chat in the Tri-State District; and the total amount of crude ore mined by the defendants' alleged predecessors as a percentage of the total production for Ottawa County.

Jimmy Dale Palmer and Teresa Palmer, v. ASARCO Incorporated, Inc., et al. Mr. Gravel was retained to conduct a historical investigation and render opinions on mining and milling techniques; the role and influence of the Federal government on mining activities and methods; whether chat, tailings and other mining by-products were/are saleable products that possess commercial value; and the state of knowledge relating to the toxic effects of lead in chat, tailings and surface dust.

Trenton Herd et al. v. ASARCO Incorporated, Inc., et al. Mr. Gravel acted as a 30(b)(6) witness testifying as a company representative. In this capacity, Mr. Gravel provided testimony in several areas relating to the companies historic mining operations and practices on both restricted and unrestricted Indian lands located in Ottawa County, Oklahoma, dating from the 1890's.

Forensic History and Environmental Cost Analysis

Working on behalf of a major communications industry client, Mr. Gravel directed the analysis of facility operations, response costs and development of a cost claim package supporting a CERCLA cost recovery claim of over \$100 million. The work involved documenting historic facility operations and cleanup activities; assessing the appropriate response costs to be claimed (consistent with the NCP); documenting claimed costs both at the summary and detail level; and assisting the client by determining allocated shares for the parties involved in the case.

Working on behalf of a petroleum industry client, Mr. Gravel directed a large Federal government involvement project encompassing eight facilities. Work included determining the extent to which the Federal government was involved in the construction and/or operations of the facilities during World War I, World War II, the Korean War; establishing the historical fact basis and Federal nexus for each site; overseeing the development of past and future remedial cost estimates; validating a response costs for the claim; ensuring claimed costs were consistent with the NCP for recovery purposes; developing a cost allocation using time temporal and production-weighted approaches; and assisting with claims preparation and negotiations between the client and Federal government.

Working on behalf of the Debtor in the bankruptcy context, Mr. Gravel acted as one of project team's key leaders performing environmental claims (response costs and NRD) estimation for a matter where environmental claims exceeded \$6 billion. Mr. Gravel's primary work on this matter involved management of the case team and acting as liaison between Debtor's counsel, Debtor and outside counsel; conducting analysis of NRD claims; conducting analysis and developing debtor cost share percentages for specific sites; assisting in the development of expert and rebuttal reports and supporting the testifying experts.

Working on behalf of a PRP Group, Mr. Gravel managed the execution of an investigation focused on the identification of PRPs contributing to sediment contamination on a waterway located the Midwestern United States. The work performed was related to a Natural Resource Damages (NRD) claim brought by federal and state NRD trustees including, the U.S. Fish and Wildlife Service and the State of Ohio. Mr. Gravel developed and executed a research plan that documented the contribution of a number of parties to the contamination present in the sediments and assisted in obtaining information useful in conducting a baseline determination to support a habitat equivalency analysis (HEA). His particular emphasis involved documenting the nexus of a number of entities that operated on, or in close proximity to, the waterway by examining various contaminant pathways relating to specific historic operations. He also assisted in the development of a cost allocation framework to facilitate settlement among the parties.

Working on behalf of a joint defense group, Mr. Gravel developed and executed a work plan aimed at identifying contributors to TCE contamination in a groundwater plume located in California. Mr. Gravel worked with Common Counsel to establish and execute a work plan that examined a number of industries and specific industrial plants in an attempt to document both the use of TCE by the target entities and specific releases or operations practices that may have resulted in contribution to the contamination by these entities. Research involved the review of federal, state and local records and records relating to specific target entities as well as certain manufacturing processes employed by those entities.

Working on behalf of a PRP Group, Mr. Gravel managed the execution of an investigation focused on the identification of PRPs contributing to sediment contamination on a waterway in the northwestern United States. Mr. Gravel developed and executed a research plan that documented the contribution of a number of parties to the contamination. His emphasis involved documenting the operations of a number of Federal entities on the waterway and developing nexus packages for certain Federal entities. He was also involved in initial efforts aimed at examining cost allocation issues and securing the participation of the Federal entities through the Department of Justice.

Working on behalf of a large manufacturing client, Mr. Gravel developed a work plan and managed the execution of an extensive PRP investigation aimed at identifying parties contributing to PCB contamination of a waterway in the Midwestern United States. He directed an investigation examined a number of industries and entities and provided counsel with detailed information on a number of parties. The investigation focused on a number of specific issues such as the historic use of PCBs by specific entities in specific processes or equipment. Research included federal and state repositories, historical societies, local repositories and specialized private and industrial collections.

Working on behalf of Dade County, Florida, Mr. Gravel acted as a consulting expert in support of a cost recovery action against the United States for TCE contamination at Miami International Airport. Mr. Gravel assisted Counsel with developing and implementing a discovery plan; managed the execution of a research effort aimed at documenting the Federal government's involvement at Miami International Airport over time; interviewed and assisted with witness preparation for trial; provided research and related support to expert witnesses and provided assistance with the development of trial exhibits and other materials.

Working on behalf of a large private manufacturing client, Mr. Gravel developed and executed a work plan aimed at identifying contributors to the contamination of a river located in New England. Mr. Gravel worked with Counsel examining a number of industries and specific industrial plants along the river to document the potential contribution of these plants to the PCB and other contamination. Research involved the review of federal, state and local records and records relating to specific entities located along the river as well as certain manufacturing processes employed by those entities.

Working on behalf of a PRP Group, Mr. Gravel managed the execution of a PRP search involving a large multi-parcel multi-use landfill site located in the Midwest. Mr. Gravel and his team conducted historical research and interviewed witnesses in order to develop a baseline historical operations report for the sites and to identify generator and transporter PRPs. Mr. Gravel also supervised the development of a transactional database based on manifests, invoices and other data which was used as the basis for the development of an interim cost allocation; he coordinated the establishment of a document repository to house the Group's records relating to the sites; and he worked with the Group on other related allocation process and investigations issues.

Working on behalf of a major transportation company, Mr. Gravel managed a PRP investigation involving an oil recycling facility that operated from approximately 1950 to 1965. The work performed involved directing research, including National Archives military records, state and local agency records, historical society archival sources, library records, and the like. Identified several PRPs and witnesses not previously named by U.S. Environmental Protection Agency. Also, directed witness location and interview process to obtain oral histories. In addition, compiled volumetric information from transactional data and examined waste volume ratios for federal entities vs. private parties in support of cost allocation efforts.

Working on behalf of a major U.S. energy provider, Mr. Gravel managed the execution of a PRP search for a waterway in New York. The work performed involved developing a historical research and investigations work plan, overseeing the research at federal, state, local and private information repositories, identifying PRPs, conducting waste stream analysis, managing witness identification, location and interviewing and developing PRP profiles to be presented to the U.S. EPA on behalf of the client. Mr. Gravel also oversaw the development of a database that includes PRP profiles as well as waste-in data that will ultimately be used to apportion responsibility among parties on the waterway.

Working on behalf of a joint defense group comprised of electric utilities, Mr. Gravel managed the execution of several research efforts aimed at assisting the Group with the collection of EPA and Congressional materials related to the development, implementation and enforcement of the Clean Air Act, and, specifically New Source Review (NSR). The work involved commenting on the method proposed by EPA for producing documents responsive to the defendant's discovery requests and conducting research in various archives and Federal and State government repositories to assist with the documentation of the program's history and implementation and the Federal government's role in its development and enforcement.

On behalf of an aircraft engine manufacturer and real estate development company, Mr. Gravel managed a historical investigation aimed at identifying the source of Trichloroethylene (TCE) contamination at a former Army Air Force flight training facility. The work performed included, developing the research work plan and directing the research team at the National Archives, several defense agency facilities, and private repositories. He also analyzed the information collected and developed a written report of his team's findings documenting the historical use and discharges of TCE at the facility over time.

Products Liability and Toxic Torts

Working on behalf of a historic manufacture lead-based paint and paint pigments, Mr. Gravel directed and investigation of alternate causes of potential lead contamination in certain cities in the Midwest United States. He and his team conducted research and analyzed data relating to historic operations, products, distribution locations and other related topics.

Working on behalf of a large private equity firm, Mr. Gravel managed the development of an estimate of potential future liabilities relating to a company's historic manufacture lead-based paint and paint pigments. The evaluation involved the estimation of liabilities primary related to lawsuits alleging personal injury and nuisance brought in approximately 10 states.

Working on behalf of a tire and rubber manufacturer, Mr. Gravel assisted in the development and execution of a litigation discovery plan aimed at assisting litigation counsel with the identification, harvesting and analysis of company materials potentially relevant to a number products liability lawsuits filed in various jurisdictions. This work involved developing identification and review protocols, establishing triage and detailed review teams and coordinating with vendors to conduct "plant sweeps" at four plant facilities. He also developed the protocols for and managed the reproduction, OCR, bibliographic and subjective coding processes; and ensured that regional Counsel located across the U.S could upload the materials to a secure on-line repository for use in specific cases.

Working on behalf of an industry joint defense group, Mr. Gravel managed a multi-state product liability investigation project. The project involved consulting on the development of a discovery plan; coordinating the work of several project managers and dozens of researchers developing historical state-of-awareness information using a variety of sources; coordinating the review of both hard copy and electronic data including the review of 250,000 e-mails; and overseeing the development and implementation of a data management system containing over 1 million records.

Attachment 2

Industrial Mobilization For War

HISTORY OF THE WAR PRODUCTION BOARD
AND PREDECESSOR AGENCIES

1940 • 1945

Volume I
PROGRAM AND ADMINISTRATION



BUREAU OF DEMOBILIZATION
CIVILIAN PRODUCTION ADMINISTRATION

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price \$1.75 cents

HISTORICAL REPORTS ON WAR ADMINISTRATION • WAR PRODUCTION BOARD
General Study No. 1

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UNITED STATES GOVERNMENT PRINTING OFFICE
WASHINGTON : 1947

FOREWORD

THIS book is one of several studies designed to meet the need for a full and objective analysis of the administrative problems and techniques involved in the mobilization of American industry during World War II. The need for such a record of the Government's experience, the mistakes and failures no less than the achievements, was recognized almost from the beginning of the war period. Officials concerned with defense preparations in 1940 and 1941 found that existing records of World War I experience were too incomplete and too poorly organized to serve as guides in the emergency then facing the Nation. When war came, officials, therefore, urged the systematic recording and objective analysis of World War II administrative experience for use in the event of future emergencies; they recognized that such activity might also contribute to an improvement of peacetime administration. Officials, particularly in the War Production Board, were convinced that currently prepared studies of recurring problems would assure greater continuity of policy and materially aid them in carrying out their responsibilities during the war.

In March 1942, at the suggestion of the President, the Director of the Bureau of the Budget appointed a Committee on the Records of War Administration to encourage the Federal departments and war agencies to record their wartime experience. Under the stimulus of the committee, the War Production Board in July 1943 established a Policy Analysis and Records Branch to carry out an integrated program of records preservation and classification and of analytical studies, with the joint objective of aiding Board officials in their current responsibilities and of providing a permanent record of World War II industrial mobilization for future guidance. This program was continued under the Civilian Production Administration after termination of the War Production Board in November 1945.

In carrying out this program, the staff was guided by the conviction of President Roosevelt and President Truman that only an objective and critical analysis would have value for the future. This view was supported fully by Donald M. Nelson and J. A. Krug, Chairmen of the War Production Board, and by John D. Small, Administrator of the Board's successor agency, the Civilian Production Administration. The staff is especially indebted to G. Lyle Belsley, whose active interest and support as Executive Secretary of the War Production Board made possible this unique opportunity for an analysis of the Government's stewardship in industrial mobilization during World War II.

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Foreword

drafted for these volumes are, however, available for reference in the *Policy Documentation File*.

The present volume, *Program and Administration*, the first in the *General Studies* series, is confined primarily to the work of the Advisory Commission to the Council of National Defense, the Office of Production Management, the Supply Priorities and Allocations Board, and the War Production Board. The study is based almost wholly upon the official records of these agencies and upon interviews with their officials. Consequently, it does not deal with the important contributions made by other war agencies, except indirectly; nor does it attempt to cover the extremely important contributions made by industry and labor in achieving production goals. While the analysis is presented within a chronological frame of reference, roughly by years, emphasis is placed within each time period upon the basic factors that determined program goals, policies, and methods of administration. Failures as well as achievements are recorded on the assumption that only by so doing can the results of the Government's wartime experience in industrial mobilization be of any real value in future emergencies.

The professional staff responsible for preparing the text of the present volume was under the general supervision of James W. Fesler, War Production Board Historian. Responsibility for the research, interpretation, and actual writing of the various parts was divided, primary responsibility for each part being assigned to the senior of the coauthors named first in each instance: Parts I and II by Charles M. Wilke and Maryclaire McCauley; part III by Nathan D. Grundstein and Ruth H. Phillips, with the assistance of Gilbert Conyers who prepared the original draft of chapter 12; part IV by Drummond Jones and Virginia Turrell; part V by Carroll K. Shaw and Marian D. Tolles; and part VI by J. Carlyle Sitterson and George R. Kinzie. The various parts and chapters were reviewed and integrated into the form of the volume by James W. Fesler, who also prepared the Conclusion.

Members of the Advisory Council to the War Production Board Historian, which was appointed by WPB Chairman J. A. Krug in November 1945, reviewed the preliminary draft of this study and made valuable suggestions and comments. Members of the Council, however, are not responsible for any errors in the text of the volume. The Advisory Council consisted of the following former officials of the defense and war production agencies:

Hiland G. Hatcheller	Arthur H. Runker	Bertrand Fox
William L. Batt	Melvin G. de Chazau	William K. Frank
G. Lyle Belsley	Fredrick M. Eaton	Edwin B. George
Thomas C. Blaisdell, Jr.	Ferdinand Eberstadt	Bernard L. Gladieux
L. R. Boulware	W. Y. Elliott	Lincoln Gordon
George W. Brooks	Herbert Emmerich	Charles I. Gragg
Allen Buchanan	John F. Fennelly	John P. Gregg

Industrial Mobilization for War

The results of the program, which are listed in the appendix to this volume, are embodied in the organized records of the defense and war production agencies, and in four series of published reports. A *Policy Documentation File* makes permanently available in convenient reference form at Washington the basic original records of industrial mobilization policies and administration. The minutes of the principal boards and committees of the defense and war production agencies have been printed in a *Documentary Publications* series. The 30 published monographs in the *Special Studies* series present in some detail an analysis of the major policy and operating areas important to an understanding of the administrative and economic problems encountered during the war years. The single issuance in the *Miscellaneous Publications* series affords a brief chronology of the War Production Board and related agencies. Finally, a *General Studies* series was planned to provide a comprehensive analysis of industrial mobilization and reconversion. As projected, this series would include the following three studies:

Volume I. INDUSTRIAL MOBILIZATION FOR WAR:

History of the War Production Board and Predecessor Agencies, 1940-45. Program and Administration;

Volume II. INDUSTRIAL MOBILIZATION FOR WAR:

History of the War Production Board and Predecessor Agencies, 1940-45, Materials and Products;
and

Volume III. INDUSTRIAL RECONVERSION AND CIVILIAN PRODUCTION, 1945-47:

History of the Civilian Production Administration.

Each volume in the series was planned as an independent publication covering the subjects indicated by the subtitles. The first volume, here presented, focuses on the over-all problems of program and administration, and references to individual materials, products, and industries are illustrative only. The second volume was intended to present the basic production record of the United States munitions program against the background of production problems and administrative controls. Materials, equipment, utilities, critical components, and munitions production would be treated in some detail. The second volume would therefore complement the first, and both would cover the period 1940-45. The third volume was projected to deal with the reconversion of American industry to peacetime production, principally the policies and activities of the Civilian Production Administration after the cessation of hostilities in late 1945. The termination of the Civilian Production Administration has made it impossible to complete and publish volumes II and III of the *General Studies* series. Manuscript copies of the chapters

Industrial Mobilization for War

Luther H. Gulick
Leon Henderson
Frank W. Herring
Ralph D. Hetzel, Jr.
A. C. C. Hill, Jr.
Sidney Hillman
E. F. Jeffe
Milton Katz
James S. Knowlson

William S. Knudsen
J. A. Krug
C. K. Leith
E. A. Locke, Jr.
Isador Lubin
Shaw Livermore
Stacy May
Robert R. Nathan
Donald M. Nelson

David Novick
John Lord O'Brien
Walter C. Skuce
John D. Small
Blackwell Smith
Andrew Stevenson
Joseph L. Weiner
Charles E. Wilson
Howard I. Young

Completion and publication of this volume were carried out under the supervision of the Chief of the Policy Analysis and Records Branch, who became War Production Board Historian in August 1946. Under his direction, Phillips D. Carleton was responsible for editing and preparing the manuscript for the printer, and for making all arrangements incident to actual publication. Mae M. Link assisted in the final editing. The secretarial assistance of Helen T. Shea is gratefully acknowledged. The staff is especially indebted to Marie Charlotte Stark, who organized the *Policy Documentation File* and made available the original sources upon which the book is based.

Collaboration and group research have made possible the early publication of this study. The authors have endeavored to present a full and impartial record of the Government's role in industrial mobilization during World War II. The results of their efforts, here presented, provide a record for future guidance. This book should also prove useful in stimulating and aiding further studies of wartime administration.

GEORGE W. AUXIER,
Chief, Policy Analysis and Records Branch,
Bureau of Demobilization,
Civilian Production Administration.

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textiles, and metal mining, tended to move into the shipyards and aircraft factories where the wage scales were higher. This problem was not serious, however, before 1942.

Facilities and Construction

The facilities and construction program of OPM was largely a continuation and extension of the work begun under the Advisory Commission. The emphasis shifted from private to public financing, and toward the end of the year, when materials, manpower, and time alike were limited, the conversion of existing plants to war uses became more important than new construction. The groundwork of the whole program, however, had been laid under NDAC.

Construction under OPM.—Under the Office of Production Management the whole facilities program, including both military construction and industrial plants, was centralized in the Shipbuilding, Construction, and Supplies Branch of the Production Division. Until September, when he succeeded Biggers as director of the Production Division, W. H. Harrison served as chief of the branch and also as chief of the Construction Section, which handled all facilities except those for shipbuilding.

Every effort was made by the construction engineers in OPM to design away from critical materials as far as it could be done. Conservation measures, together with the operation of the priority system, insured in the main an adequate supply of materials for construction purposes until late in the year. Despite the deepening international crisis and the rising tempo of the defense effort, no real attempt was made to limit civilian or nonessential building activities until September. Materials for defense construction commanded high priorities, but as long as there was material available, lower rated orders were also filled. With the creation of the Supply Priorities and Allocations Board on August 28, and the parallel reorganization of OPM, the administration of the defense program tightened all along the line, and at its second meeting, SPAB announced that priorities for critical materials to be used in expansion of plant capacity to meet purely civilian demand would no longer be approved if appreciable quantities were involved.⁶⁵

Three weeks later, SPAB agreed upon the drastic curtailment of construction of commercial office buildings and certain types of public buildings; and on October 7 prohibited the initiation of any non-essential public or private construction requiring "appreciable quantities of critical materials." At the same time, a general policy was announced to the effect that priorities assistance for procurement of materials would thereafter be extended only to projects necessary for national defense or essential to the maintenance of public health and

⁶⁵ *Minutes of SPAB*, September 9, 1941, p. 2.

welfare.⁶⁶ The policy was vigorously protested by the construction industry, but it nevertheless stuck, and building in the Eastern States in consequence dropped 24 percent between September and December 1941.⁶⁷

The record for the year was impressive. The initial troop housing program was virtually completed by October 1, and substantial progress had been made in fitting out the Caribbean and Newfoundland bases acquired from the British.⁶⁸ Altogether, a facilities expansion program totalling more than \$16 billion was started in 1941, with direct military construction accounting for \$2.7 billion, industrial service for \$2.6 billion, housing for \$3.6 billion, and manufacturing, including petroleum extraction and mining, for more than \$7.5 billion.⁶⁹ The largest single item in the plant expansion program was \$965 million for explosives and ammunition loading, with iron and steel a close second accounting for \$925 million. Plants for producing guns and ammunition were initiated to a total cost of \$825 million; ships, \$817 million; petroleum extraction and mining, \$795 million; other chemicals exclusive of petroleum and synthetic rubber, \$588 million; and aircraft, \$544 million.

Plant Sites.—Under the Advisory Commission, plant location had been one of the factors taken into consideration in the clearance of facility contracts. The increasing pressure from local interests for a share in the defense program, however, and the necessity for securing maximum speed and safety with a minimum of congestion and labor dislocation required that more attention be given to the problem. Pressed as it was with business, the OPM Council did not consider the question of plant location until the establishment of an independent plant site board by congressional action was threatened. The disadvantages of such a procedure were called to the attention of the Council on March 17, and it was agreed that a Plant Site Committee of five members should be set up in the Division of Purchases, which already had the contract clearance function. The five members appointed by Knudsen and Hillman were Donald M. Nelson, chairman; Clifford Townsend, special adviser on Agricultural and Labor Matters; Eli L. Oliver, special assistant on Labor Relations; E. F. Johnson, Chief of the Aircraft Ordnance and Tools Branch; and S. R. Fuller, Jr., chairman of the Production Planning Board.⁷⁰ Much of the detailed work was handled by Edwin M. Martin, who served as assistant to the chairman. The Committee was renamed the Plant Site Board without change in membership, and its procedure was pre-

⁶⁶ *Ibid.*, September 30, and October 7, 1941, pp. 11, 13; SPAB Press Release SPA-9, October 9, 1941.

⁶⁷ Reginald C. McOrane, *The Facilities and Construction Program of the War Production Board and Production Agencies* (Civilian Production Administration, 1946), pp. 69-70.

⁶⁸ *Ibid.*, pp. 43-46.

⁶⁹ Industrial Statistics Division, CPA, and Bureau of the Census, Department of Commerce, "Facilities Expansion, July 1940-June 1943" (Facts for Industry, Series 50-4-2, January 16, 1946), table 1, p. 23.

⁷⁰ *Minutes of the Council of OPM*, March 17, 1941, p. 10; OPM Press Release PM-174, March 18, 1941.

scribed on May 6, 1941.⁷¹ MacKeechie succeeded Nelson as chairman when the latter became Director of Priorities in September.

The Plant Site Board cooperated with similar boards set up by the War and Navy Departments in the review of locations for defense plants, and did not hesitate to withhold its approval where sites were deemed unsatisfactory. The Plant Site Board had its own research staff, which analyzed all proposals in the light of availability of labor, transportation, housing, power, raw materials, supply and destination of product, and other relevant factors. So far as possible, an attempt was made to locate plants away from highly industrialized areas. Other agencies of the Government, such as the Federal Power Commission, the Coordinator of Defense Housing, the Bureau of Labor Statistics, and the National Resources Planning Board were consulted for factual information, as were the various divisions and branches of OPM.⁷² To speed up the process it was agreed in June that only plants to cost \$500,000 or more had to be submitted for site clearance, and after Pearl Harbor this figure was raised to \$1,000,000.⁷³

The Plant Site Board actually exercised a species of over-all planning function, although it was done in negative terms. The Board could not initiate anything, but by rejecting proposals offered, asking reexamination, and recommending specific changes, it did exercise a guiding influence in plant location, which prevented many bottlenecks and much undue concentration of industry.⁷⁴

Housing.—The functions exercised by the Coordinator of Defense Housing under the Advisory Commission were never transferred to the Office of Production Management, but through the priorities system OPM played an important part in the 1941 housing program. In April the funds available for housing and related purposes under the Lanham Act were doubled, making a total of \$300 million and this sum was raised to \$600 million in December. To translate these funds into houses, however, priorities were necessary, and Stettinius accordingly proposed a system of housing priorities to the OPM Council late in July. The plan was to apply to both private and public housing, which was to be in specified defense areas and was not to exceed \$6,000 per dwelling unit in cost.⁷⁵

The plan was considered by the Council but no action was taken. Knudsen, Hillman, and Stettinius then conferred with Palmer on the problem and asked for an estimate of the volume of materials that would have to be given priority ratings, together with a list of the governmental agencies involved. Palmer estimated that 525,000 dwelling units must be built, of which 125,000 would have to be pub-

⁷¹ OPM Regulation 6, May 6, 1941, file 014.82.

⁷² Reginald C. McGrane, *The Facilities and Construction Program of WPPB* . . . , pp. 56-60.

⁷³ Memorandum, Donald M. Nelson to Brig. Gen. H. K. Rutherford, June 30, 1941, file 016.34; *Minutes of the Council of OPM*, December 15, 1941, p. 81; OPM Document 76; file 014.5.

⁷⁴ Reginald C. McGrane, *The Facilities and Construction Program of WPPB* . . . , p. 58.

⁷⁵ *Ibid.*, pp. 62-63.

licly financed. On August 19, the OPM Council approved priorities for 101,750 publicly financed dwelling units, and a week later approved "in principle" a blanket preference rating for privately constructed housing, limiting the number, however, to 200,000.⁷⁶ The details of this plan were announced on September 19 by Nelson, after he had succeeded Stettinius as Director of Priorities. The plan was essentially the same as that proposed by Stettinius in July.⁷⁷

Manpower

Manpower problems were of increasing importance during 1941, with the rapidly expanding industrial machine calling for ever larger numbers of skilled and semiskilled workers. Labor became restive in the face of rising living costs and pressure to extend the workweek, while progressive limitations on civilian production tended to create areas of "priority unemployment." Growing industries, such as aircraft and shipbuilding, invited organizing drives by competing unions, and serious labor difficulties threatened at various points.

Labor Supply and Training.—The activities of the NDAC Labor Division in locating and training workers for the defense program were continued under the Office of Production Management, but techniques were improved and processes speeded up as the need grew more urgent. On April 30, 1941, the President wrote to Knudsen and Hillman that every critical machine in the country must be worked around the clock, and that the country must "be further combed for men who have had experience on these machines."⁷⁸ A month later, following the declaration of an unlimited emergency, the OPM Labor Division was directed by the President "to undertake full responsibility for getting the necessary workers into the plants" of defense industries, with a suggestion that as many as possible be transferred from consumer goods industries.⁷⁹ A reorganization of the Labor Division followed, with the Labor Supply and Training Branch being split into two branches. Labor Supply was placed under Arthur Flemming, a member of the United States Civil Service Commission, and Defense Training was assigned to Lt. Col. Frank J. McSherry, who was also director of Defense Training in the Federal Security Agency. At the same time, the United States Employment Service was made responsible to the chief of the Labor Supply Branch, and a Labor Priorities Branch was set up under J. Douglas Brown to handle the placement of workers released by the closing of unessential industries.⁸⁰

The job of finding and recruiting workers was essentially a local one, and so the reorganized Labor Supply Branch functioned through

⁷⁶ *Minutes of the Council of OPM*, August 19 and 26, 1941; pp. 52-54.

⁷⁷ Reginald C. McGrane, *The Facilities and Construction Program of WPPB* . . . , pp. 63-66.

⁷⁸ OPM Doc. 26, file 014.5.

⁷⁹ Letter, the President to Sidney Hillman, May 28, 1941, file 016.406; OPM Doc. 46, file 014.5.

⁸⁰ Richard J. Purcell, *Labor Policies of the National Defense Advisory Commission and Office of Production Management* (Civilian Production Administration, 1946), pp. 17, 25, 67-70.